Sociology 200

Crowds of People at Jones Beach photo by Robert Sisson

from: http://www.art.com/asp/sp-asp/_/pd--11967847/sp--A/Crowds_of_people_at_Jones_Beach.htm
accessed 4/19/07

April 20, 2007
Population

Agenda

- Population dynamics
  - Factors affecting population
    - Fertility/Fecundity
    - Mortality
    - Migration
- Theories of population growth
  - Malthusian population growth
  - Marx's theory
  - Thompson's demographic transition theory

Population Dynamics

- In general, to estimate populations for the future (population dynamics) the formula is

$P_{(\text{in future})} = P_{(\text{at present})} + \text{births} - \text{deaths} \pm \text{migration}$

- Births are dependent upon **fertility** (*the actual number of births in a given population)*

- While births are measured by fertility, fecundity, the physiological potential to bear children, is limited largely to women between ages 15 and 45.
  - The maximum number of children a woman could have is approximately 30, but in countries with high birth rates more than 8 is unusual

- The **crude birthrate** is one measure of fertility. It *measures the number of annual live births per 1,00 people in a given population*.

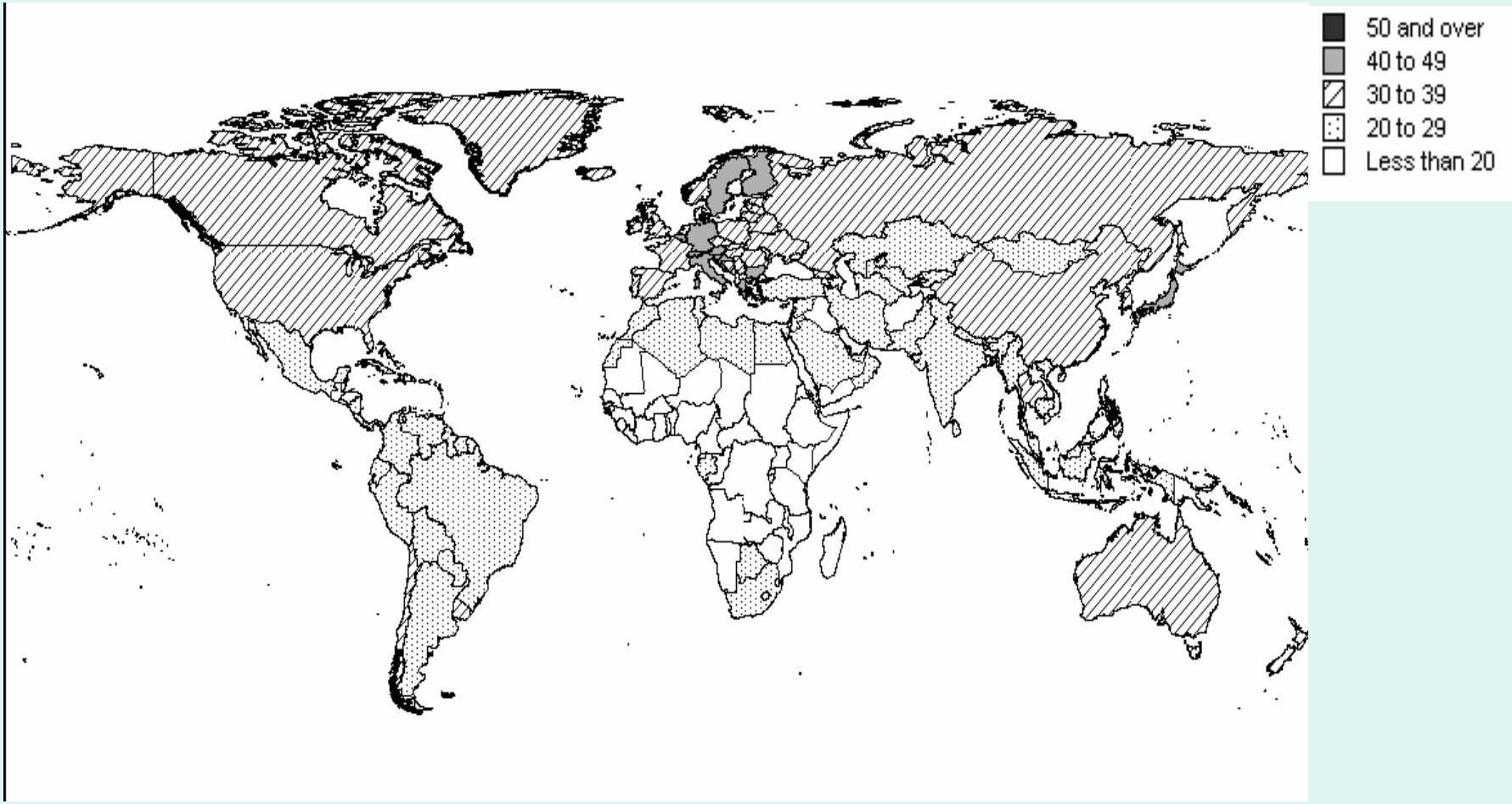
- A second measure that can be used as an indicator is the **fertility rate** which is the *annual number of live births per 1,000 women of childbearing age, usually ages 15-44*

- *Those researchers who study populations and population dynamics are called* **demographers**, and *the studies are called* **demography**

- Deaths
  - **Mortality** is *the frequency of deaths in a population*
  - Measures include
    - **Crude death rate** or *annual numbers of deaths per 1,000 people in a given population*
    - **Age specific death rates** or *annual numbers of deaths per 1,000 in a population at specific ages*
    - **Infant mortality rate** *measures the number of children who die within the first year of life per 1,000 live births*

- **Life expectancy** is another measure – *it is the average number of years a person born in a particular year can expect to live*
  - There is high variability internationally for life expectancy
    - Among the highest
      - Japan 82
      - Iceland 81
      - Sweden 82
      - Australia 80
    - Among the lowest
      - Botsana 35
      - Lesotho 35
      - Swaziland 35
      - Zambia 37

- An alternate measure could include the median age



Median ages for 2005 from UN World Population Prospects, p 24

http://www.un.org/esa/population/publications/wpp2006/wpp2006_highlights.pdf

Migration

- Migration is the movement of populations from one geographical area to another
  - **Emigration** *occurs when a population leaves an area*
  - **Immigration** *occurs when a population enters an area*
  - **Internal migration** *is movement of population within a nation's boundaries*

Theories of Population

- Malthusian theory
- Concieved of by Thomas Malthus (1776-1834)
  - Food supplies grow arithmetically while population grows geometrically (straight lines vs hyperbola), therefore if populations are left unchecked human populations will outgrow their food supplies and suffer poverty and “struggle for existence”

- Malthus saw there were checks to keep down population growth
  - Preventive checks are practices that would limit reproduction (celibacy, delay of marriage, contraception in marriage, etc.)
  - Positive checks are events that limit reproduction either by causing death before the individual reached reproductive age or by causing deaths of large numbers of people (famines, wars, epidemics, and so forth)
- By the time of the industrial revolution, fertility declined emigration eased European population pressure thus showing Malthus wrong for the European case (they also were bringing in resources from elsewhere)

- Marx's theory of population growth
  - Marx contended that industrialism is the problem
  - Large umbers of unemployed and underemployed compete for few available jobs, keeping down wages.
  - Marx then contends that only under socialism is there hope of eliminating poverty and miseries of overcrowding and scarce resources for the masses.

- Demographic Transition Theory (Thompson)
  - Societies pass through four states of population change from high fertility and high mortality to relatively low fertility and low mortality (from study of Sweden)
    - Stage 1 High fertility, high mortality
    - Stage 2 High fertility, declining mortality, increased food supply, beginnings of family planning introduced
    - Stage 3 Population growth begins to decline
    - Stage 4 Low fertility, low mortality

- Overpopulation undermines economic growth by raising the **dependency ratio** *which is the number of people of nonworking age in a society for every 100 people of working age*
  - Stage 2 is difficult because of this factor (see p 427)